WATER SUPPLY SUMMARY AND OUTLOOK
for
OREGON

UNITED STATES DEPARTMENT of AGRICULTURE···SOIL CONSERVATION SERVICE
and
OREGON STATE UNIVERSITY
and
STATE ENGINEER of OREGON

Data included in this report were obtained by the agencies named above in cooperation with other Federal, State and private organizations.

AS OF
OCT. 1, 1965

UNITED STATES DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

To Recipients of Water Supply Outlook Reports:

The climate of the cultivated and populated areas of the West is characterized by relatively dry summer months. Such precipitation as occurs falls mostly in the winter and early spring months when it is of little immediate benefit to growing crops. Most of this precipitation falls as mountain snow which stays on the ground for months, melting later to sustain streamflow during the period of greatest demand during late spring and summer. Thus, nature provides in mountain snow an imposing water storage facility.

The amount of water stored in mountain snow varies from place to place as well as from year to year and accordingly, so does the runoff of the streams. The best seasonal management of variable western water supplies results from advance estimates of the streamflow.

A snow survey consists of a series of about ten samples taken with specially designed snow sampling equipment along a permanently marked line, up to 1000 feet in length, called a snow course. The use of snow sampling equipment provides snow depth and water equivalent values for each sampling point. The average of these values is reported as the snow survey measurement for a snow course.

Snow surveys are made monthly or semi-monthly beginning in January or February and continue through the snow season until April, May or June. Currently more than 1400 western snow courses are measured each year. These measurements furnish the key data for water supply forecasts.

Streamflow forecasts are obtained by a comparison of total or maximum snow accumulation, as measured by snow water equivalent, to the subsequent spring and summer or snowmelt season runoff over a period of years. The snow water equivalent measured in selected snow courses provides most of the index to the streamflow forecast for the following season. More accurate forecasts are usually obtained when other factors such as soil moisture, base flow and spring precipitation are considered and included in the forecast procedure. Early season forecasts assume average climatic conditions through the snowmelt season.

Listed below are the Federal-State-Private Cooperative Snow Survey and Water Supply Forecast reports available for the West which contain detailed information on snow survey measurements, streamflow forecasts, reservoir storage, soil moisture and other guide data to water management and conservation decisions. Soil Conservation Service Reports may be secured from Soil Conservation Service, 511 N.W. Broadway - Room 507, Portland, Oregon 97209.

PUBLISHED BY SOIL CONSERVATION SERVICE

REPORTS	ISSUED	LOCATION	COOPERATING WITH
RIVER BASINS			
Western United States	Monthly (Feb.-May)	Portland, Oregon	All Cooperators
Basic Data Summary	October 1	Portland, Oregon	All Cooperators
STATES			
Alaska	Monthly (Mar.-May)	Palmer, Alaska	Alaska S.C.D.
Arizona	Semi-Monthly (Jan. 15 - Apr. 1)	Phoenix, Arizona	Salt R. Valley Water Users Assoc. Ariz. Agr. Exp. Station
Colorado and New Mexico	Monthly (Feb.-May)	Fort Collins, Colorado	Colo. State University Colo. State Engineer N. Mex. State Engineer
Idaho	Monthly (Jan.-June)	Boise, Idaho	Idaho State Reclamation Engineer
Montana	Monthly (Jan.-June)	Bozeman, Montana	Mont. Agr. Exp. Station
Nevada	Monthly (Jan.-May)	Reno, Nevada	Nevada Dept. of Conservation and Natural Resources Division of Water Resources
Oregon	Monthly (Jan.-June)	Portland, Oregon	Oreg. State University Oregon State Engineer
Utah	Monthly (Jan.-June)	Salt Lake City, Utah	Utah State Engineer
Washington	Monthly (Feb.-June)	Spokane, Washington	Wn. State Dept. of Conservation
Wyoming	Monthly (Feb.-June)	Casper, Wyoming	Wyoming State Engineer

PUBLISHED BY OTHER AGENCIES

REPORTS	ISSUED	AGENCY
British Columbia	Monthly (Feb.-June)	Water Resources Service, Dept. of Lands, Forest and Water Resources, Parliament Bldg., Victoria, B.C., Canada
California	Monthly (Feb.-May)	Calif. Dept. of Water Resources, P.O. Box 388, Sacramento, Calif.

USDA-S.C.S.-PORT. AND OREG.-1964

WATER SUPPLY SUMMARY AND OUTLOOK
for
OREGON

ISSUED

OCTOBER 8, 1965

Report prepared by

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and

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WATER SUPPLY SUMMARY AND OUTLOOK for OREGON

October 1, 1965

Oregon's reservoirs have the best carry-over water supplies ever recorded, even exceeding the good year of 1956. Thirty-one reservoirs report a total storage of 2,629,100 acre feet of water compared with 2,060,100 last year and a 15-year average (1948-62) of 1,866,900 acre feet for this date.

Spring and summer water supplies have been adequate in Oregon with flow of some streams east of the Cascades exceeding average amounts. Qualified observers report that many streams, usually dry at this date, are still flowing in the upper watersheds of Oregon's eastern mountains.

Watershed soils are drier than usual in valleys, but wetter than average in most upper watershed areas.

If average conditions of precipitation prevail, streamflow for the balance of the year will be about average in the West half of the state and slightly above average in the Eastern half.

Details of the water supply situation in various Oregon regions are as follows:

Owyhee-Malheur Watersheds

Water-wise it has been a good season in Malheur County and streamflow for the period April through September has been slightly above average and adequate for most needs.

The Owyhee Project delivered normal water allotments to all lands and the huge reservoir has a whopping carry-over of 513,000 acre feet compared with 464,900 acre feet last year. The greatest carry-over in Lake Owyhee was 613,000 acre feet in 1936. Inflow to Lake Owyhee, April through September, was 108 per cent of the 15 year average (1948-62), confirming the forecast of last April 1 which was for 105 percent inflow.

The Warmsprings and Vale-Oregon Irrigation Districts delivered normal water allotments to all lands and finished the season with a total carry-over of 163,300 acre feet in the three reservoirs, Agency Valley, Warmsprings,and Bully Creek. Last year these reservoirs held-over only 28,800 acre feet of water.

Jordan Valley Irrigation District had an excellent season and finished up with 12,000 acre feet held-over in Antelope reservoir. Local water users are concerned because of a damaged outlet gate, which is leaking badly, but management of the district is vigorously pushing a repair program for this gate as well as repairs to diversion facilities at the head of the feeder canal where floods of last winter did great damage.

Burnt-Powder-Pine-Grande Ronde Watersheds

Water users in Baker, Union and Wallowa counties have enjoyed a very adequate water supply in the past six months. Cool temperatures and timely summer rainfall have contributed much to the good season.

Burnt River Irrigation District had an excellent season and reports indicate that all water users along Burnt River had adequate supplies. Unity reservoir has a carry-over supply of 7,000 acre feet compared with 4,900 acre feet last year. Whited reservoir was apparently not drawn down at all this year.

Flow of Powder River and tributaries has been adequate for this season's irrigators. Flows of tributaries and smaller streams have held up longer than in many previous years.

Grande Ronde River has furnished adequate irrigation water this year with flows of Catherine Creek and Wallowa River holding up exceptionally well. Wallowa Lake has a record carryover supply of 28,800 acre feet. Last year's holdover was 19,200 acre feet.

Umatilla-Walla Walla-Rock Creek-Lower John Day Watersheds

Water-wise, irrigators in Umatilla, Morrow and Gilliam counties had about an average season this year--most acres had adequate supplies but too many acres, chronically short, followed the usual pattern this year.

Cold Springs reservoir furnished adequate water for Hermiston Irrigation District this season and was emptied about September 20.

McKay reservoir delivered full allotments of water and ended the season with a holdover of 23,400 acre feet compared with 3,000 acre feet last year. This is the greatest holdover since 1943 when 26,800 acre feet were held for use in the following season.

Good fall rains are needed to complete the recharge of soil moisture in the watersheds and thus undergird the snowpack yet to come.

Upper John Day Watersheds

An excellent irrigation season has been completed in the John Day country and streamflow in the main stem of the river, as well as in many tributaries, continues to be above average. In fact, streamflows are holding up so well that needed stream channel work, to repair flood damage of last winter, is being held up.

Good fall rains are needed here to recharge the soil mantle in all watersheds.

Upper Deschutes and Crooked Watersheds

Irrigators enjoyed an excellent season in Deschutes, Jefferson and Crook counties this year and end the season with a strong supply of carryover water in local reservoirs.

In the Ochoco country the total carryover water supply in Ochoco and Prineville reservoirs is 130,200 acre feet compared with 109,300 acre feet last year. Soil moisture at Marks Creek station on the head of Marks Creek is 70 percent of capacity--a year ago it was 63 percent. Precipitation has been much above average on this watershed.

Water has been plentiful on the main Deschutes river and holdover water left in three major reservoirs there is 200,000 acre feet compared with 82,900 acre feet a year ago. Current storage figures are: Crane Prairie, 31,800 acre feet; Crescent Lake, 59,300; and Wickiup, 108,900 acre feet.

Water year precipitation, October through September 1964-65, has been about 150 percent average at Bend compared with only 50 percent average last year. Some of this extra precipitation will probably flow out of "ground-water storage" into streams next year, raising the outlook for next season.

Hood-Mile Creeks-Lower Deschutes Watersheds

Irrigators in Hood River and Wasco counties have enjoyed water supplies somewhat better than average with Mile Creeks and other small streams holding up longer than usual. This has been due to the unusual "timing" of precipitation and temperatures, for it is a matter of record that spring and summer rainfall has been about 65 percent average in the Hood River country and slightly better than average on the Mile Creek watersheds.

Willamette Watersheds

Streamflow in the Willamette valley has been substantially below average during the April through September period but most water users have had adequate water supplies, largely because of timely releases from upstream multi-purpose reservoirs.

Flow of the Middle Fork of the Willamette, below North Fork, was 646,000 acre feet or 67 percent of the 15 year average (1948-62) of 967,800 acre feet in April through September this year.

Rogue-Umpqua Watersheds

Spring and summer streamflows in the Rogue-Umpqua area have been adequate for most water users but fell below the amounts expected.

Flow of the Rogue at Raygold for the April through September period was forecast at 950,000 acre feet or 95 percent of the 15 year average. The flow was actually measured at 854,900 acre feet or 85 percent of the average.

Storage in local reservoirs in the Rogue country is very good and similar to last season at this date. Fish Lake and Fourmile Lake reservoirs now hold 13,900 acre feet compared with 14,000 acre feet last year for the Medford and Rogue River Valley Irrigation Districts.

The Talent District now has a total of 66,500 acre feet in Emigrant, Howard Prairie, and Hyatt Prairie reservoirs compared with 71,300 acre feet a year ago.

A good snowpack added to these carryover water supplies will produce adequate water for 1966.

Klamath Basin Watersheds

Klamath Basin had excellent water supplies during the past six months and ends the 1965 season with excellent carryover water in the local reservoirs.

Inflow to Upper Klamath Lake, April through September, was measured at 577,100 acre feet, a substantially smaller figure than had been expected. The lake now holds 420,600 acre feet compared with 350,000 acre feet a year ago.

Gerber and Clear Lake reservoirs have a substantial carryover of 272,800 acre feet of water compared with 132,000 last year.

Lake County Watersheds

Water supplies in this southcentral Oregon country have been slightly better than usual this spring and summer despite unusually low precipitation during the last three months.

Moisture in upper watershed soils is 5 to 12 percent greater than a year ago and probably better than average.

Carryover water supplies now held in Drews Valley and Cottonwood reservoirs total 40,500 acre feet compared with 31,800 acre feet last year.

Harney Basin Watersheds

Spring and summer water supplies in Harney Basin have been remarkably adequate this year due in part to an unusual pattern of "timely" precipitation and cool temperatures.

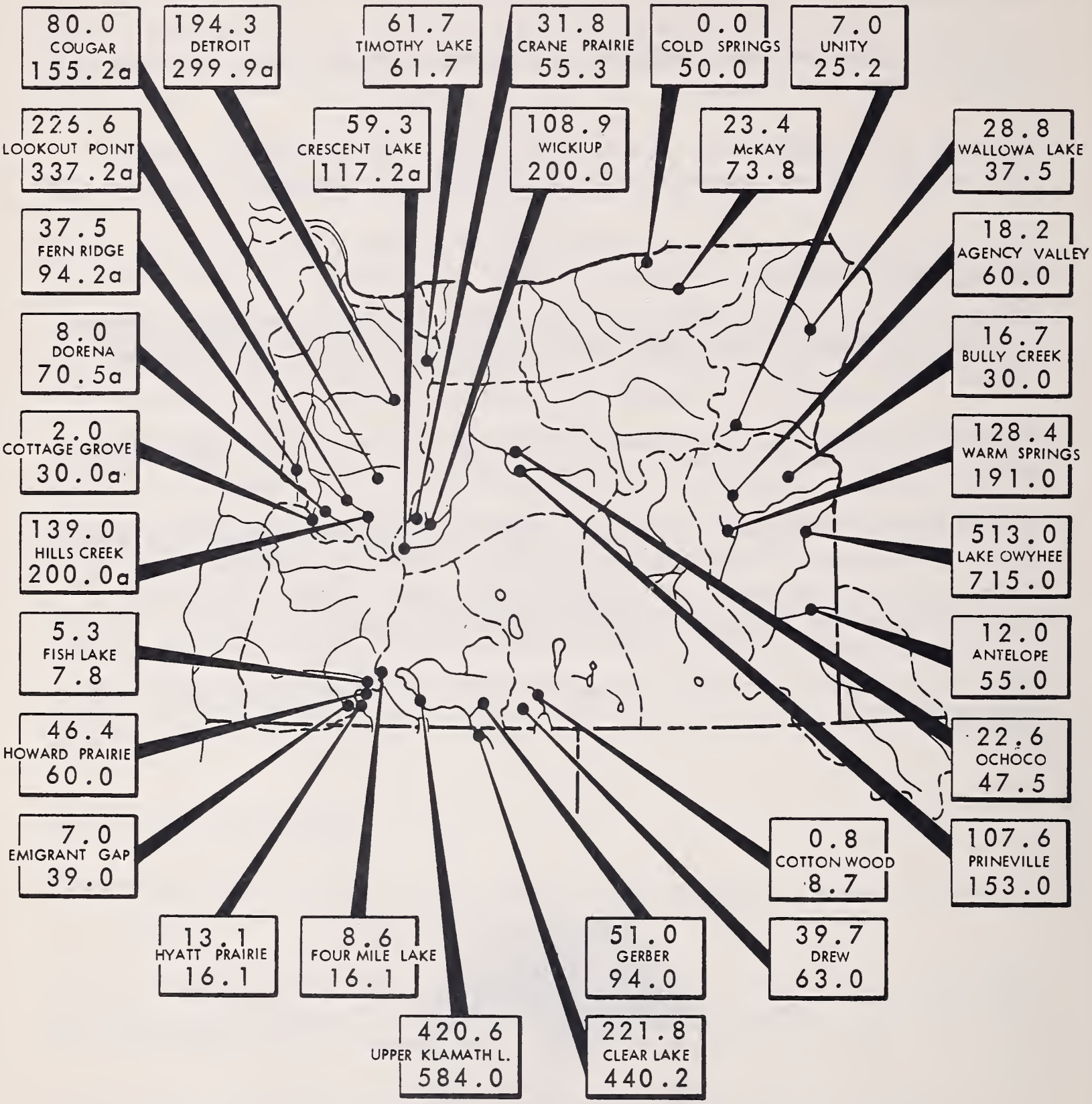
Streamflow has held up longer than usual and spring flow has been surprisingly good.

Soil moisture in the higher watersheds is better than last year except for the top foot of the soil profile which has been partially dried out by recent winds. In the Steens Mountains in the south half of Harney Basin the soil moisture is especially good and ranges up to 70-75 percent of capacity.

Good fall rains plus an average snowpack could combine to give adequate water supplies in 1966.

STORAGE STATUS of OREGON RESERVOIRS
usable contents in thousands of acre feet

OCTOBER 1, 1965



EXPLANATION

687.0 / LAKE OWYHEE / 715.0

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---Capacity

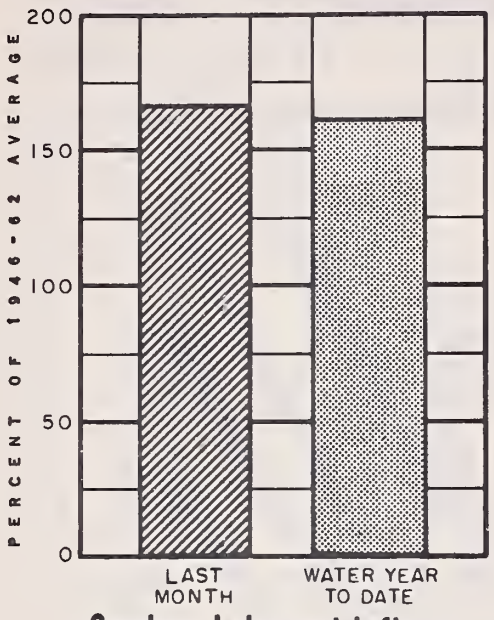
(a) Multiple purpose reservoir - space reserved for flood runoff.
N. R. - No report.

STATUS OF RESERVOIR STORAGE, OCTOBER 1, 1965

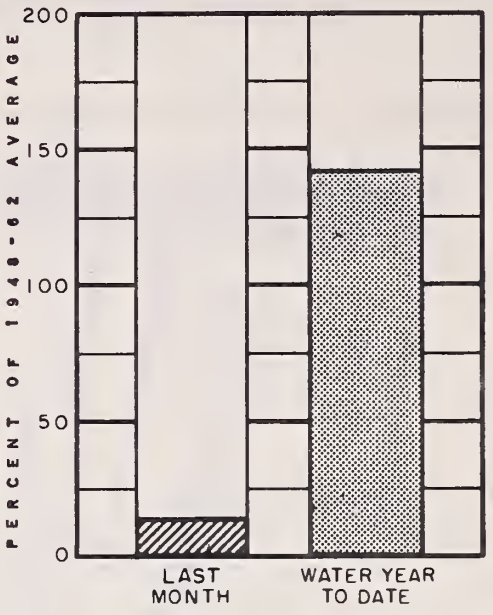
RESERVOIR	USABLE CAPACITY (Thous. A.F.)	THOUSANDS ACRE FEET IN STORAGE ABOUT OCT. 1 1965	1964	15 year average 1948-62
		UPPER COLUMBIA DRAINAGE LOWER SNAKE IN OREGON		
Antelope	55.0	12.0	11.8	- -
Owyhee	715.0	513.0	464.9	270.4
Agency Valley	60.0	18.2	9.2	7.8
Bully Creek	30.0	16.7	4.8	- -
Warmsprings	191.0	128.4	14.8	33.9
Unity	25.2	7.0	4.9	2.9
Wallowa Lake	37.5	28.8	19.2	13.6
		LOWER COLUMBIA DRAINAGE		
Cold Springs	50.0	0.0	4.3	3.0
McKay	73.8	23.4	3.0	15.5
Ochoco	47.5	22.6	14.4	15.5
Prineville	153.0	107.6	94.9	- -
Crane Prairie	55.3	31.8	23.7	32.9
Crescent Lake	117.2	59.3	38.8	39.2
Wickiup	200.0	108.9	20.4	38.1
Cottage Grove	30.0	2.0	5.3	7.5
Cougar	155.2	80.0	103.3	- -
Detroit	299.9	194.3	193.2	194.0
Dorena	70.5	8.0	5.9	14.3
Fern Ridge	94.2	37.5	11.2	45.9
Hills Creek	200.0	139.0	140.5	- -
Lookout Point	337.2	226.6	222.7	174.6
Timothy Lake	61.7	61.7	61.6	55.6
		WEST COAST DRAINAGE		
Fourmile Lake	16.1	8.6	9.2	6.4
Fish Lake	7.8	5.3	4.8	2.1
Howard Prairie	60.0	46.4	50.2	- -
Hyatt Prairie	16.1	13.1	11.6	5.5
Emigrant Gap	39.0	7.0	9.5	1.7
Upper Klamath	584.0	420.6	350.0	295.4
Gerber	94.0	51.0	34.5	20.1
Clear Lake	440.2	221.8	97.5	157.3
Cottonwood	8.7	0.8	0.2	0.0
Drew	63.0	39.7	31.6	25.0

CURRENT OREGON STREAMFLOW

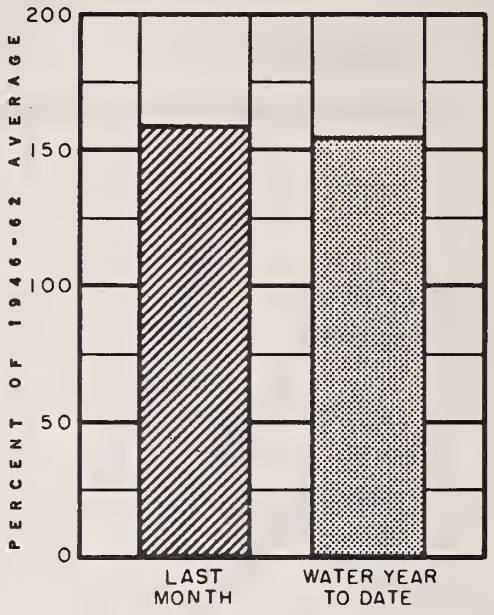
OCTOBER 1, 1965



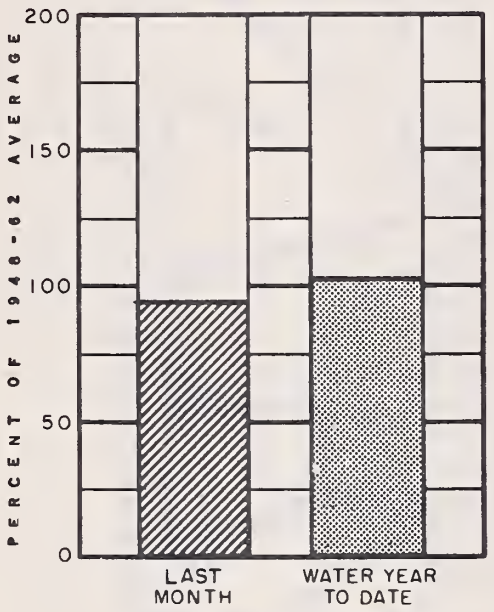
Owyhee Lake net inflow



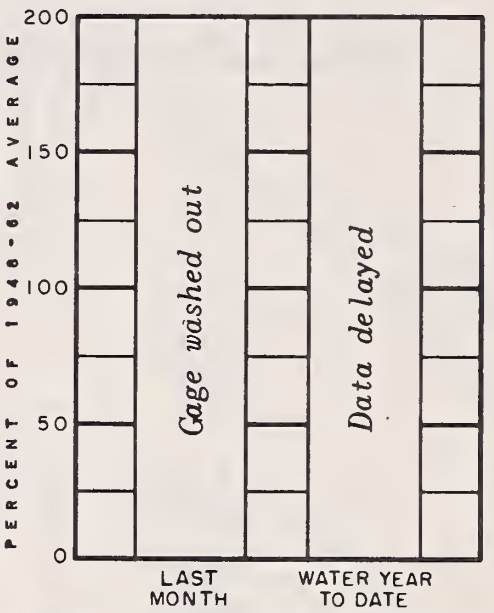
Umatilla near Umatilla



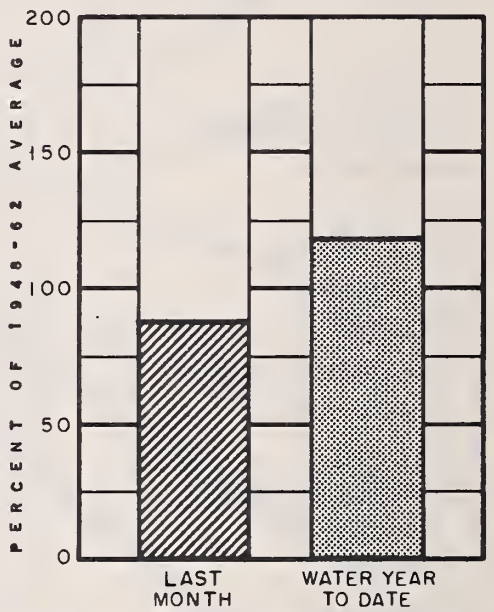
John Day at Service Creek



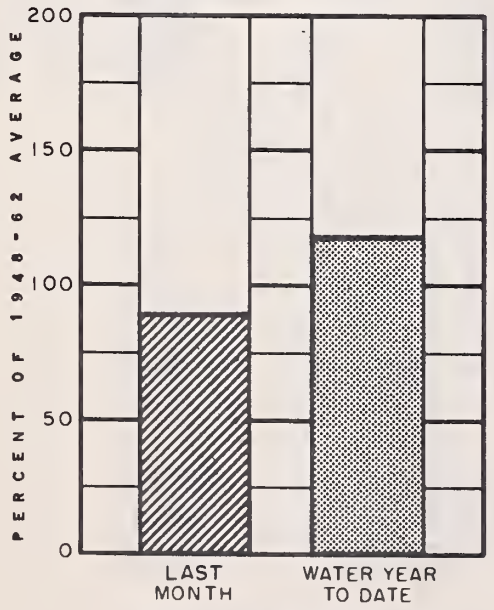
Deschutes at Moody



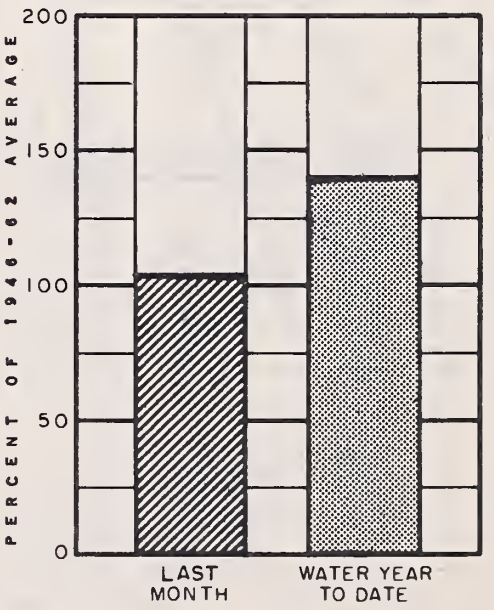
Hood and conduit near Hood River



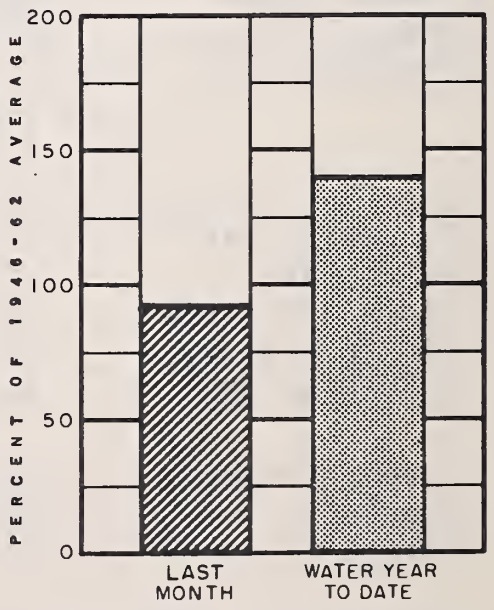
Mid. Fk. Willamette below No. Fk.



Umpqua near Elkton



Rogue at Raygold



Upper Klamath Lake net inflow

Data furnished by U.S. Geological Survey; The Pacific Power and Light Co.; and North and South Boards of Control Owyhee Project.

The Following Organizations Cooperate in the Oregon Snow Survey Work

STATE
- Idaho Cooperative Snow Surveys
- Nevada Cooperative Snow Surveys
- Oregon State University
- Oregon State Engineer and Corps of State Watermasters
- Oregon State Highway Engineers
- Soil and Water Conservation Districts of Oregon

COUNTY
- Douglas County Water Resources Survey

FEDERAL
- Department of Agriculture
  - Cooperative Extension Service
  - Forest Service
  - Soil Conservation Service
- Department of Commerce
  - Weather Bureau
- Department of the Interior
  - Bonneville Power Administration
  - Bureau of Land Management
  - Bureau of Reclamation
  - Fish and Wildlife Service
  - Geological Survey
  - National Park Service
- Department of National Defense
  - Corps of Army Engineers

PUBLIC UTILITIES
- Pacific Power and Light Company
- Portland General Electric Company
- California-Pacific Utilities Company

MUNICIPALITIES
- City of Baker
- City of La Grande
- City of The Dalles
- City of Walla Walla

IRRIGATION DISTRICTS
- Arnold Irrigation District
- Associated Ditch Companies
- Burnt River Irrigation District
- Central Oregon Irrigation District
- East Fork Irrigation District
- Grants Pass Irrigation District
- Hood River Irrigation District
- Jordan Valley Irrigation District
- Lakeview Water Users, Incorporated
- Medford Irrigation District
- Middle Fork Irrigation District
- North Board of Control - Owyhee Project
- North Unit Irrigation District
- Ochoco Irrigation District
- Rogue River Valley Irrigation District
- South Board of Control - Owyhee Project
- Squaw Creek Irrigation District
- Talent Irrigation District
- Tumalo Project
- Vale-Oregon Irrigation District
- Warmsprings Irrigation District

PRIVATE ORGANIZATIONS
- Amalgamated Sugar Company
- The Crag Rats, Hood River, Oregon

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